SECTION 15121

STEAM AND CONDENSATE SPECIALTIES

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LANL MASTER CONSTRUCTION SPECIFICATION

When editing to suit project, author shall add job-specific requirements and delete only those portions that in no way apply to the activity (e.g., a component that does not apply). To seek a variance from applicable requirements, contact the LEM Mechanical POC.

When assembling a specification package, include applicable specifications from all Divisions, especially Division 1, General Requirements.

Delete information within "stars" during editing.

Coordinate with Mechanical Standard Drawings ST6200 through ST6204 steam details. For site steam and condensate specialties refer to LANL Construction Specification 02554 and Civil Standard Drawings ST3950.

Specification developed for ML-3 projects. For ML-1 / ML-2, additional requirements and QA reviews are required.

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PART 1 GENERAL

1.1 SECTION INCLUDES

A. The following specialties downstream of first steam shutoff valve inside building:

1. Steam traps.
2. Steam air vents.
3. Vacuum breakers.
4. Pressure gauges.
5. Moisture separators.
6. Pressure reducing valves.
7. Safety relief valves.
8. Condensate pressure motive pumps.

1.2 SUBMITTALS

A. Submit the following in accordance with Section 01330, Submittal Procedures:

1. Catalog data of specialties specified.

2. Installation instructions for steam traps, pressure reducing valves, and safety relief valves and condensate pressure pumps.

3. Operating and maintenance data of specialties specified.

1.3 QUALITY ASSURANCE

A. Comply with ASME B31.9, Building Services Piping.

PART 2 PRODUCTS

2.1 PRODUCT OPTIONS AND SUBSTITUTIONS

A. Comply with Section 01630, Product Options and Substitutions.

2.2 FLOAT AND THERMOSTATIC TRAP

A. Manufacturer: Watson McDaniel, Series FT.

B. Trap: Cast iron body, with stainless steel interior parts, maximum operating pressure 125 psig at 350 degrees F.

1. Capacity: [ ] lbs/hr condensate at [ ] psig pressure differential.

2. Size: [ ] inch. [Minimum size 3/4 inch.]

2.3 THERMOSTATIC TRAP

A. Manufacturer: Watson McDaniel, Series WT 3000.

B. Trap: Stainless steel construction, maximum operating pressure 300 psig at 750 degrees F.

1. Capacity: [ ] lbs/hr condensate at [ ] psig inlet pressure.

2. Size: [ ] inch. [Minimum size 3/4 inch.]

2.4 LIQUID DRAIN TRAP

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Size trap to match separator outlet drain.
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A. Manufacturer: Watson McDaniel, Series WLD1600.

B. Trap: Cast iron body with stainless steel interior parts, maximum operating pressure 125 psig at 350 degrees F.

1. Capacity: [ ] lbs/hr. [Minimum size 3/4 inch.]

2. Size: [ ] inch.

2.5 STEAM AIR VENTS

A. Manufacturer: Watson McDaniel, AV2000.

B. Air Vent: Stainless steel body with stainless steel interior parts, bellows operated, suitable for steam service to 150 psig.

1. Size: 1/2 inch NPT inlet and outlet.

2.6 VACUUM BREAKER

A. Manufacturer: Durabala, No. BSSV.

B. Vacuum Breaker: Stainless steel body with stainless steel interior parts, suitable for steam service to 150 psig.

1. Size: 1/2 inch NPT inlet and outlet

2.7 PRESSURE GAUGE

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Refer to manufacturer's recommendation for gauge pressure ranges. Generally, a pressure range of twice the working pressure is recommended, with maximum working pressure not exceeding 75 percent of the range. If pulsation occurs, working pressure should not exceed 65 percent of the pressure range.
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A. Manufacturer: Reotemp Instruments

B. Gauge: ANSI B40.1, Grade A, minimum 3 inch dial, 1/4 inch NPT brass bottom connection, phosphor bronze bourden tube, 1 percent accuracy full scale, phenolic or metal casing, with Schedule 40 steel siphon tube.

1. Range: [ ] psi or [See Drawings].

2.8 MOISTURE SEPARATOR

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Size moisture separator inlet to match building supply steam piping.
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A. Manufacturer: Watson McDaniel, Series WDS.

B. Moisture Separator: Steam service, cast iron construction, maximum operating pressure 125 psig at 350 degrees F.

1. Size: [ ] inch [NPT or 125 lb. flanged connections].

2.9 PRESSURE REDUCING VALVE

A. Manufacturer: Watson McDaniel, Type DP.

B. Pressure Reducing Valve: Steam service, cast iron construction, self operating, external pilot, single seated, normally closed, maximum inlet pressure 250 psig at 450 degrees F.

1. Capacity: [ ] lbs/hr at [ ] psig inlet and [ ] psig outlet pressures.

2. Size: [ ] inch - threaded up to 2 inches, flanged over 2 inches.

3. Valve Spring: [3 to 25 psig, yellow] [20 to 100 psig, blue] [80-200 psig, red].

2.10 SAFETY RELIEF VALVES

A. Manufacturer: Kunkle, [No. 6010 (threaded ends, bronze body)] [No. 252 (flanged ends, iron body).

B. Valve: Steam service, ASME approved, N.B. certified, lever handle, factory tested and adjusted, maximum pressure setting 250 psig at 406 degrees F.

1. Capacity: [ ] lbs/hr at 10 percent accumulation.

2. Orifice Size: [ ] sq. inch.

3. Size: [ ] inch - threaded up to 2 inches, flanged over 2 inches.

4. Accessories: Drip pan elbow, shipped loose, same size as relief valve outlet.

2.11 CONDENSATE PRESSURE MOTIVE PUMPS

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Complete skid-mounted unit, including receiver tanks, pump(s), check valves, etc., all fully piped are available. It is recommended that a receiver tank be specified when above ground steam/condensate distribution lines feed the building. Consult with the motive pump distributor for selection guidance. Specify ASME coded receiver tanks.

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A. Manufacturer: Watson McDaniel, [Series PMP C, (Ductile Iron Body)] or [ ].

PART 3 EXECUTION

3.1 INSTALLATION

A. Install specialties in accordance with manufacturer's instructions.

B. Provide condensate piping no smaller than trap inlet.

END OF SECTION